

IN THE SPECIFICATION:

Please amend the specification as follows:

Please amend the Federal Research Statement at the beginning of the specification as follows:

This invention was made with government support under Contract No. DE-FC26-01NT41229
~~97FT343656~~ awarded by the U.S. Department of Energy. The government has certain rights in the invention.

Please amend paragraph [0036] as follows:

Nevertheless, routing the transmission line 34 through the central bore may expose the transmission line 34 to drilling fluids, cements, wireline tools, or other substances or objects passing through the central bore 35. This can damage the transmission line 34 or cause the transmission line 34 to negatively interfere with objects or substances passing through the central bore 35. Thus, in selected embodiments, a transmission line 34 is preferably maintained as close to the wall 39 of the central bore 39 as possible to minimize interference. In selected embodiments, the transmission line 34 is protected by a conduit ~~34~~ or other protective covering ~~34~~ to protect it from damage.

Please amend paragraph [0043] as follows:

As illustrated, a transmission element 56 may be installed into the secondary shoulder 58. The transmission element 56 may be used to transmit a signal across the tool joint by communicating with a corresponding transmission element 56 located on another downhole tool 12 (not shown). The transmission element 56 may transmit energy in several different ways. For example, in selected embodiments, the transmission element ~~56~~ ~~58~~ may transmit electrical energy by direct electrical contact another transmission element ~~56~~ ~~58~~.

Please amend paragraph [0044] as follows:

In other embodiments, the transmission element 56 ~~58~~ may communicate inductively. That is, the transmission element 56 ~~58~~ may convert an electrical signal to magnetic energy for transmission across the tool joint. The magnetic energy may then be converted back to an electrical signal by another transmission element 56 ~~58~~. To accommodate the transmission element 56 ~~58~~, a recess may be formed in the secondary shoulder 58. The transmission line 34 may connect to the transmission element 56 ~~58~~ through the channel 44 in the pin end 38.